

TBD08 – (Part 09) Respiration

Name _____

1. B.9.1 Compare aerobic and anaerobic respiration of glucose in terms of oxidation/reduction and energy released. (3) *In aerobic respiration, glucose is converted into pyruvate, which, in the presence of oxygen, changes to carbon dioxide and water. Overall, glucose undergoes oxidation and oxygen undergoes reduction. In anaerobic respiration, pyruvate is converted to lactate in human beings, whereas yeast converts pyruvate to ethanol and carbon dioxide. Redox equations should be used as appropriate.*
 - a. What is cellular respiration?
 - b. There are two kinds of cellular respiration, what are they called and what are they?
 - c. Give an equation for each of the three types of respiration:
 - i. Aerobic
 - ii. Anaerobic (in plants)
 - iii. Anaerobic (in animals)
2. B.9.2 Outline the role of copper ions in electron transport and iron ions in oxygen transport. (2) *Cytochromes and hemoglobin are suitable examples.*
 - a. What is a cytochrome?
 - b. Draw the heme group, what process is it used for?
 - c. What is the equation for the reduction of oxygen into water?
 - d. What is cytochrome oxidase? What does it contain? What does it do?
 - e. Explain what haemoglobin is, writing the reaction, and stating why one side of equilibrium is favoured over another at times:
 - f. What is oxy-hemoglobin?